Amendments to the Drawings:

The attached sheets of drawings include changes to Figures 1, 2 and 3. These sheets replace the original sheets.

Remarks/Arguments:

Claims 1-23 are pending and stand rejected.

By this amendment, claims 1-23 are amended.

No new matter is added by the claim amendments. Support for the claim amendments can be found throughout the original specification and, for example, in the original specification at page 18, line 10 to page 20, line 18 and Fig. 6.

Drawing Objections

In the Office Action, at item 4, Figs. 1-3 are objected to because various rectangular boxes and other features in the drawings are not labeled with text. Moreover, the Examiner suggests that the connecting lines be identified with numbers and with the direction of flow.

Applicants have provided replacement drawings that include proper labeling of features. Applicants, however, submit that there is no drawing requirement to label connecting lines or show direction of flow. As such, Applicants believe that the replacement drawings enclosed overcome this drawing rejection.

In the Office Action, at item 5, the drawings are objected to for not showing every feature of the inventions specified in the claims. More particularly, the Examiner objects to various features in claim 6 (i.e., a stop message receiving section, a routing capability message generating section and a capability message transmitting section), in claim 7 (i.e., a routing stop message generating section, and a stop message transmitting section), in claim 8 (i.e., a capability message receiving section and in claim 12 (i.e., a terminal receiving section and a router switching section) not being shown in the drawings.

With regard to the features in claim 6, alleged not to be shown in the figures, the stop message receiving section corresponds to the LAN interface 31 and IP/routing processing section 32, the routing capability message generating section corresponds to the IP/routing processing 32 and the capability message transmitting section corresponds to the LAN interface 31 and the IP/routing processing section 32. More particularly, the LAN interface 31 is disclosed to execute a physical/layer processing and data-link-layer processing in the communication with terminal 13 and other routers within LAN 1. (See the original specification

at page 16, lines 4-7.) Furthermore, the IP/routing processing section 32 receives a routing stop message from router 11 (see page 20, line 22 and Fig. 7 at step S71) produces a routing capability message after a decision that a router is capable of becoming a master router (see the original specification at page 21, line 2 and Fig. 7 at step S73) and multicasts the routing capability message to terminals 13 and other routers within LAN 1 (see the original specification at page 21, line 5 and Fig. 7 at step S74). With regard to the features in claim 7, alleged not to be shown in the figures, the routing stop message generating section and the stop message transmitting section correspond to the transition-to-back-up routing processing section 36. More particularly, the transition-to-back-up routing processing section 36 produces a routing stop message, after receiving a notification (see the original specification at page 18, line 21 and Fig. 6 at step S63), and sends the routing stop message by multicast to terminal 13 and router 12 existing on LAN 1 (see the original specification at page 18, line 23 and Fig. 6 at step S64).

With regard to the drawings not showing the capability message receiving section feature of claim 8, the IP/routing processing section 32, which corresponds to this section, checks whether or not the routing capability message from another router has been received (see the original specification at page 20, line 1 and Fig. 6 at step S67).

With regard to the drawings not showing various features in claim 12, the terminal receiving section corresponds to the LAN interface 21 which executes physical/layer and data-link-layer processing for the communication with other terminals and routers in the LAN 1, (see the original specification at page 22, line 21). The router switching section corresponds to the routing switch over section 26, which counts the transition time for the back-up router existing in neighbor cache 25 to change into the master router, to switch the default router (see the original specification at page 23, line 10).

Accordingly, Applicants submit that the drawing objection is overcome and withdrawal of the objection is respectfully requested.

Claim Objections

In the Office Action, at item 6, claims 1-11 and 13 are objected to for informalities therein.

Claims 1-11 and 13 have been amended and are submitted to overcome this objection.

Reconsideration is respectfully requested.

Rejection of Claims 1-13 under 35 U.S.C. §112, Second Paragraph

In the Office Action, at item 7, claims 1-13 are rejected under 35 U.S.C. §112, second paragraph as being generally narrative and indefinite.

Claims 1-13 have been amended to overcome this rejection.

Reconsideration is respectfully requested.

Rejection of Claim 1 under 35 U.S.C. §102(e)

In the Office Action, at item 9, claim 1 is rejected under 35 U.S.C. §102 as anticipated by D'Annunzio et al. (U.S. Patent Publication No. 2003/0069990, hereafter referred to as D'Annunzio).

Reconsideration is respectfully requested.

Claim 1 is directed to a routing control method of a local area network (LAN) comprising one or more terminals having at least one LAN interface, one or more routers having a routing function performing a relay of data between the LAN and an external network, and a LAN medium connecting the terminals and routers mutually, and recites:

> first multicasting, by a first router of the one or more routers, a routing stop message indicating the routing function of first router is to stop or has stopped, the multicasting of the routing stop message being responsive to the routing function of the router being disabled or being predicted to become disabled during the execution of the routing function;
>
> after the first multicasting of the routing stop message, second multicasting, by another of the routers, a routing capability message,
>
> ... the second multicasting is responsive to the another router being capable of executing the routing function, so that the routing function is switched to the another router.

That is, a first multicast message is sent by a first router indicating the routing function of the first router is to stop or has stopped and a second multicast message is sent by another router receiving the routing stop message responsive to the another router being capable of

executing the routing function. Thus, the routing stop message informs the another router that the routing function of the first router is disabled (or is predicted to become disabled) while communication from the first router is still available.

D'Annunzio Reference

D'Annunzio discloses a standard switchover procedure. In D'Annunzio, when an advertisement message from the primary router is not received within a predetermined period, an advertisement from the back-up router is recognized by a host which treats the back-up router as the primary router. (See D'Annunzio at paragraph [0023] and claim 1.) That is, D'Annunzio is silent regarding a routing stop message (indicating the routing function of the first router is to stop or has stopped) that is multicast to another router. This is because, D'Annunzio teaches the switchover of the routing function being based on communication from the master router being unavailable.

Accordingly, it is submitted that claim 1 patentably distinguishes over D'Annunzio for at least the above-mentioned reasons.

Rejection of Claims 6-8, 10 and 12-13 under 35 U.S.C. §102(e)

In the Office Action, at item 10, claims 6-8, 10 and 12-13 are rejected under 35 U.S.C. §102(e) as anticipated by Shinomiya (U.S. Patent Publication No. 2003/0037165).

Reconsideration is respectfully requested.

Claim 6 is directed to a router and recites: "a stop message receiving section for receiving a routing stop message indicating a routing stop time, as a time remaining until a stop of a routing function, from another router which is executing the routing function ..." That is, the stop message receiving section receives a routing stop message indicating a routing stop time, as a time remaining until a stop of the routing function. The routing stop time is the time that another router which is executing the routing function will stop its routing function.

Shinomiya Reference

Shinomiya discloses that the switchover of routers is initiated when an advertisement packet is not received from the master router for a predetermined period. (See Shinomiya at

paragraph [0069].) In the Office Action, at pages 6 and 7, the Examiner contends that Shinomiya discloses that:

> "a stop message receiving section for receiving a routing stop message giving the routing stop time, the time remaining until stop of a routing function, from another router which is executing the routing function (Fig. 4, element 37, ICMP message processor, paragraphs [0081], [0082]); a master transition deciding section for deciding whether or not a router can execute the routing function when the message receiving section receives a routing stop message (paragraph [0095]) ..."

That is, the Examiner cites to paragraphs [0081], [0082] and [0095] as disclosing the claimed routing stop message. The cited paragraphs, however, merely disclose an Internet control message protocol (ICMP) in paragraphs [0081] and [0082] and disclose that packets to be routed by each router are determined based on virtual router information and that the determined packets are allocated for each router such that a router to which the routing function is allocated is referred to as a 'router in charge' in paragraph [0095]. That is, Shinomiya at these portions is silent regarding "a routing stop time as a time remaining until a stop of the routing function, from another router which is executing the routing function," as required by claim 6. This is because, Shinomiya at these portions is silent regarding timing of the switchover process and, more particularly, the time remaining until a stop of a routing function.

Accordingly, claim 6 is submitted to patentably distinguish over Shinomiya for at least the above-mentioned reasons.

Claim 12

Claim 12, which includes similar but not identical features to those of claim 6, is submitted to patentably distinguish over Shinomiya for at least similar reasons to those of claim 6.

Claims 7-8, 10 and 13

Claims 7-8, 10 and 13, which include all of the limitations of claim 6 or claim 12, are submitted to patentably distinguish over Shinomiya for at least the same reasons as their respective independent claims.

Rejection of Claims 2-5 under 35 U.S.C. §103(a)

In the Office Action, at item 12, claims 2-5 are rejected under 35 U.S.C. §103(a) as unpatentable over D'Annunzio in view of Li et al. (U.S. Patent No. 5,473,599, hereafter referred to as Li).

Reconsideration is respectfully requested.

Claims 2-5, which include all of the limitations of claim 1, are submitted to patentably distinguish over D'Annunzio for at least the same reasons as claim 1.

The addition of Li does not overcome the deficiencies of D'Annunzio. This is because, Li does not disclose or suggest "first multicasting ... a routing stop message indicating the routing function of the first router is to stop or has stopped, the multicasting of the routing stop message being responsive to the routing function of the router being disabled or being predicted to become disabled during execution of the routing function ...," as required by claim 1. Li discloses that after determining by a new router that it preempts the active router, the new router sends a coup message to the active router. In Li, when the active router receives the coup message, the active router then sends a resign message. The resign message of Li, however, is not responsive to the routing function of the active router being disabled (or being predicted to become disabled). Instead, the resign message is responsive to the new router determining that it preempts the active router. (See Li at Col. 11, line 66 - Col. 12, line 10.) That is, Li is silent regarding a routing stop message being multicast responsive to the routing function of the router being disabled or being predicted to become disabled during execution of the routing function.

Accordingly, claims 2-5 are submitted to patentably distinguish over D'Annunzio in view of Li for at least the same reason as claim 1.

Rejection of Claims 9 and 11 under 35 U.S.C. §103(a)

In the Office Action, at item 13, claims 9 and 11 are rejected under 35 U.S.C. §103(a) as unpatentable over Shinomiya in view of Flinck et al. (U.S. Patent No. 7,099,326, hereafter referred to as Flinck).

Reconsideration is respectfully requested.

Claims 9 and 11, which include all of the limitations of claim 6, are submitted to patentably distinguish over Shinomiya for at least the same reasons as claim 6.

The addition of Flinck does not overcome the deficiencies of Shinomiya. This is because, Flinck does not disclose or suggest "a stop message receiving section for receiving section for receiving a routing stop message indicating a routing stop time, as a time remaining until a stop of the routing function, from another router which is executing the router function" as required by claim 6. Instead, Flinck discloses accelerating packet transfer in GPRS systems with the use of a specific mobility management technique in mobile nodes. In Flinck, a routing area identifier is to be translated into a part of the routing prefix in IPV6. The result in Flinck, is a combined GPRS and IPV6 routing infrastructure. This enables IPV6 mobility to be used as an alternative to GPRS mobility. In the Flinck system, router advertisements are used. These router advertisements include a router lifetime field. In the Office Action, at page 12, the Examiner contends that the routing stop message is this router advertisement message and has the routing stop time set in its lifetime field. Applicants respectfully disagree with the Examiner regarding his contention. This is because, Flinck at Col. 5, line 40-45 discloses that the router lifetime should contain "the frequency with which the mobile node receives information about Routing Area Updates." That is, the lifetime field of the router advertisement message relates to routing using IPV6 instead of other conventional solutions. More particularly, the router receiving the router advertisement of Flinck which includes the lifetime field switches routing protocol based on mobile IPV6 instead of its conventional routing for the period set in the lifetime field and then switches back routing to the conventional solution. This router, however, does not stop the routing function in accordance with the value set in the lifetime field. (See, for example, Flinck at Col. 4, lines 14-41.)

Accordingly, it is submitted that claims 9 and 11 patentable distinguish over Shinomiya in view of Flinck for at least the same reasons as their respective independent claims.

Conclusion

In view of the claim amendments and remarks, Applicants submit the application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

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LEA/so

Attachment: Figures 1, 2 and 3 (3 sheets)

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